Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC

In the Matter of	)	
	)	
AT&T Petition to Launch a Proceeding Concerning the TDM-to-IP Transition	)	**GN Docket No. 12-353**
	)	
	)	
Petition of the National Telecommunications Cooperative Association for a Rulemaking to Promote and Sustain the Ongoing TDM-to-IP Evolution	)	
	)	
	)	
Petitions for Rulemaking and Clarification Regarding the Commission's Rules Applicable To Retirement of Copper Loops and Copper Subloops	)	**RM-11358**
	)	

COMMENTS OF THE FIBER-TO-THE-HOME COUNCIL ON REQUEST TO REFRESH RECORD AND AMEND THE COMMISSION'S COPPER RETIREMENT RULES

The Fiber-to-the-Home Council ("FTTH Council" or "Council")[1] hereby respectfully submits its comments to the Federal Communications Commission ("Commission") in response

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[1] The FTTH Council's mission is to accelerate deployment of all-fiber access networks by demonstrating how fiber-enabled applications and solutions create value for service providers and their customers, promote economic development and enhance quality of life. The FTTH Council's members represent all areas of the broadband access industry, including telecommunications, computing, networking, system integration, engineering, and content-provider companies, as well as traditional service providers, utilities, and municipalities. As of today, the FTTH Council has more than 250 entities as members. A complete list of FTTH Council members can be found on the organization's website: http://www.ftthcouncil.org.

to the Public Notice on the request by a group of competitive carriers to refresh the record and make certain changes to the copper retirement rules.[2] In these comments, the FTTH Council addresses the need for the Commission to continue and further establish forward-looking policies that encourage the critical – and inevitable – evolution to all-fiber wireline communications infrastructure. Consequently, the Commission should reject proposals that would slow the process incumbent local exchange carriers ("LECs") engage in to retire copper plant.[3]

The FTTH Council's vision that all providers should accelerate the deployment of networks capable of supporting gigabit services (i.e., all-fiber networks) is widely shared by private and public sector entities and officials.[4] Less than one month ago, Chairman Genachowski made a persuasive case for gigabit networks:

> High-speed broadband is vitally important to our global competitiveness and the continued growth of our economy, and we must keep pushing for faster speeds and greater capacity through new investments in broadband networks. This investment has and will come overwhelmingly from the private sector, which is why it's vital that we continue to focus on policies to incentivize private investment and remove barriers to broadband build-out.[5]

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2 *See* Public Notice DA 13-147, Wireline Competition Bureau seeks Comments on Request to Refresh Record and Amend the Commission's Copper Retirement Rules (rel. Feb. 4, 2013) ("Public Notice").

3 *See e.g.*, Request from Mpower Communications Corp. et al. to Refresh Record and Take Expedited Action to Update Copper Retirement Rules to Promote Affordable Broadband Over Copper, WC Docket Nos. 10-188, 12-353, GN Docket No. 09-51, 13-5, RM-11358 (Jan. 25, 2013) ("Mpower Request").

4 *See e.g.*, NATOA Applauds Seattle and Gigabit Squared for Plans to Develop Ultra-Fast Broadband Network (Dec. 14, 2012), available at: http://www.natoa.org/2012/12/natoa-applauds-seattle-and-gig.html; Fiber to the Library (Sept. 2009), available at: http://www.ala.org/offices/sites/ala.org.offices/files/content/oitp/PDFs/fiber%20brief_%20published.pdf.

5 FCC News: Statement from FCC Chairman Julius Genachowski on Proposed Municipal Broadband Legislation (Feb. 15, 2013).

Because of increasing demand and declining costs, LECs are finding there is increasingly a sound business case for deploying all-fiber networks, particularly in the business and enterprise market. In the face of this growing and highly desirable trend, requiring that copper lines be maintained once fiber is deployed would be a severe setback. Keeping copper lines in place after fiber is built imposes substantial additional costs on LECs, materially harming the business case for fiber deployments. Thus, any request to amend the current rules to impose greater burdens on retiring copper facilities would be contrary to the public interest and should be rejected.

I. FIBER IS THE VASTLY SUPERIOR WIRELINE TECHNOLOGY AND, AS A RESULT, IS BEING RAPIDLY DEPLOYED BY ALL NETWORK PROVIDERS TO MEET BURGEONING DEMAND

Every wireline communications network around the world is in the midst of a transition from copper to fiber technology in their physical infrastructure. That is not to say that copper technology has not served us well or that technical advancements cannot squeeze more bandwidth from the copper wire. The FTTH Council recognizes that with bonding, vectoring, and other advancements copper wire can provide higher-bandwidth services. However, these are stopgap measures. Because of fiber's far superior performance attributes and other assets, it is the only wireline technology capable of meeting our future needs. Consequently, wireline network providers are accelerating their deployments of all-fiber technology.

There are a great many reasons to replace copper wires with fiber optic cable:[6]

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[6] Most of the factual information on fiber optic cable is from Corning's "Get the Fact on Optical Fiber!" (2012), available at: http://media.corning.com/flash/opticalfiber/2012/corning_optical_fiber/Documentation/FIBER_MATTERS/flipbook/585324499/files/inc/585324499.pdf.

- Fiber supports incredibly fast transmissions – Optical fiber can transmit 15.5 terabits of data per second over a distance of 7,000 kilometers. That means the entire iTunes catalog can be sent from the U.S. to Europe in less than 30 seconds. Not surprisingly, fiber is the underlying technology for 100 Gbps Ethernet service and will enable speeds for this service to increase greatly over time.

- Fiber has tremendous capacity and can scale to handle many times more than current volumes – A single fiber is capable of transmitting 250 million phone conversations every second.

- Fiber provides high-quality transmissions – Optical fiber is immune to electromagnetic interference

- Fiber is light, easy to handle, yet rugged – An optical fiber is the size of a human hair. One mile of fiber weighs about $1/4^{th}$ of a pound. At the same time, every centimeter of fiber is strength tested at a minimum of 100,000 pounds per square inch. There also is no theoretical lifetime for fiber, with cables installed more than 40 years ago still in use today.

- Fiber bends – Advancements over the past decade have enabled optical fiber to bend around tight corners without sacrificing performance.

- Fiber signals need less amplification – Traditional optical fiber systems needed repeaters about only every sixty miles, and, with recent innovations, signals can go hundreds of miles before they need to be amplified or regenerated.

- Fiber is green – Optical fiber does not generate excess heat while operating, which means, for instance, power loads for data centers can be reduced significantly.

- Fiber is difficult to tap or jam – It is very difficult to tap into a fiber, and any attempt may cause the glass to break. Also, the lower power levels used for optical signals increases the system sensitivity to any invasive power loss.

- Fiber technology is constantly improving – The first viable low-loss fiber had an attenuation of approximately 17 db/km; today's signal loss is just 0.17 db/km.

For all of these reasons, the National Broadband Plan concluded that "deployment of fiber offers consumers much greater potential speeds and service offerings that are not generally possible over copper loops."[7]

As a result of fiber's superiority, wireline networks around the world are being "rewired" with fiber.[8] Virtually no network provider, including no competitive provider, is installing "new" copper in its access network (from the premises, cell tower or other end point outward). Rather, copper is being installed only in those select instances where existing plant must be repaired and where complete fiber replacement is not yet scheduled.

The transition to all-fiber networks is well underway. Fiber already connects about one-third of commercial buildings.[9] Further, there are indications that the pace of fiber deployments to commercial buildings – which have grown approximately 15 percent annually – are accelerating in response to escalating customer demand. For instance, last November AT&T announced its Project Velocity, which includes a plan to "light up fiber to an additional 1M business locations" (resulting in having fiber to one-half the multi-tenant buildings in its service area) in the next three years.[10] In sum, the technology of choice for wireline network providers – and for their customers – is fiber, and, even though progress in re-wiring with fiber has been

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7 Connecting America: The National Broadband Plan at 48-49 (2010) available at: http://www.broadband.gov/plan/ ("NBP").

8 *See e.g.*, Australia's National Broadband Network project, which is underway and where in most of the country copper wires are being removed and fiber is being installed.

9 *See* Vertical Systems Group release, "Got U.S. Business Fiber?", which examines 2011 fiber penetration in buildings with more than 20 employees.

10 *See* AT&T Analyst Conference 2012, "Laying a Foundation for Future Growth," at 11 (Nov. 7, 2012).

significant, the real issue before policymakers is how to remove barriers and provide incentives to increase the pace of these deployments.

II. THE COMMISSION HAS CORRECTLY FOCUSED ON DEPLOYING HIGH-PERFORMANCE NETWORKS AND IT SHOULD CONTINUE EFFORTS TO PROVIDE INCENTIVES AND REMOVE REGULATORY BARRIERS TO EXPEDITE THE TRANSITION TO FIBER

The Commission has demonstrated it understands the great value of having high-performance networks deployed throughout the country and the need for regulatory policies to align with this objective. Two years ago, it launched the Broadband Acceleration Initiative "to expand the reach of robust, affordable broadband" by among other policies "streamlining access to utility poles and rights of way."[11] As part of this effort, the Commission established an internal Broadband Acceleration Task Force that would seek to reduce "barriers to broadband buildout by at least 20 percent."[12] The Commission's Technical Advisory Council also was charged with providing recommendations on how to accelerate broadband deployments.

More recently, the Commission Chairman announced his Gigabit City Challenge:

> American economic history teaches a clear lesson about infrastructure. If we build it, innovation will come. The U.S. needs a critical mass of gigabit communities nationwide so that innovators can develop next-generation applications and services that will drive economic growth and global competitiveness.[13]

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11 Broadband Acceleration at www.fcc.gov. The Council notes that the Commission in April, 2011 adopted amendments to its pole attachment rules to facilitate access and lower the cost and that on February 26, 2013 the United States Court of Appeals for the D.C. Circuit upheld this decision.

12 *Id.*

13 *See* FCC News: FCC Chairman Julius Genachowski Issues Gigabit City Challenge to Providers, Local, and State Governments to Bring at least One Ultra-Fast Gigabit Internet Community to Every State in U.S. by 2015 (Jan. 18, 2013).

The Commission is now following through on implementing this challenge by holding workshops to "evaluate barriers, increase incentives, and lower the costs of speeding gigabit network deployment."[14] The Commission also plans to establish a clearinghouse to gather information about best practices to speed gigabit builds.

The FCC is not the only federal agency pursuing policies to accelerate deployments of high-performance networks. US Ignite, a public-private partnership program initiated by the White House Office of Science and Technology Policy, is seeding the market for gigabit applications – and hence demand for all-fiber networks. In June, 2012, working with many private and public entities, it launched the US Ignite Partnership to "catalyze approximately 60 advanced next-gen applications over the next five years."[15] In referring to one of the test-beds, the US Ignite Executive Director stated, "In Chattanooga, Tenn., a dozen new startups are building new applications for everything from improved transportation to disaster response to a smart energy-grid by taking advantage of the city's gigabit-to-the-home fiber optic network."[16]

Deployment of all fiber networks also has been an essential part of the two broadband stimulus programs. Under the Broadband Technology Opportunities Program, which focused largely on bringing fiber to community anchor institutions, more than 86,000 miles of fiber has been deployed in the past several years.[17] As for the Broadband Initiatives Program, it has

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14 *Id.* The first workshop is scheduled for March 27, 2013. (*See* FCC Public Notice DA 13-322, Wireline Competition Bureau Announces Workshop on Gigabit Community Broadband Networks (Mar. 4, 2013).

15 *See* http://us-ignite.org/news/ (June 14, 2012).

16 *Id.*

17 *See* Testimony of The Honorable Lawrence E. Strickling, Assistant Secretary for Communications and Information, National Telecommunications and Information

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funded hundreds of FTTH projects in rural areas. In sum, the FCC and this Administration have helped – and are helping – propel the re-wiring on the country with fiber.

Even with the work done to date, the Council believes the Commission can take additional actions to accelerate fiber deployments. In essence, fiber builds are major construction projects. As such, concerns remain about timely and reasonable access to poles, conduits, and rights-of-way. As we have seen with the broadband stimulus infrastructure projects, environmental and historic preservation requirements can substantially delay builds.[18] In addition, the Commission should consider encouraging state and local governments to expedite permitting and construction approvals. Apart from the construction process, the Commission may consider ways to increase demand for gigabit networks by providing consumers with additional information. All of these are the type of forward-looking policies that are essential to our country's economic future and to providing a great many other benefits.

III. THE COMMISSION SHOULD NOT ROLL BACK THE CLOCK AND AMEND ITS COPPER RETIREMENT RULES

Competitive LECs have sought for many years to reverse the Commission's copper retirement policies.[19] For instance, in the most recent iterations of their filings, they propose to

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Administration, Department of Commerce, Before the Committee on Energy and Commerce, Subcommittee on Communications and Technology, United States House of Representatives, Feb. 27, 2013, available at: http://www.ntia.doc.gov/speechtestimony/2013/testimony-assistant-secretary-strickling-broadband-stimulus-working.

18 *See e.g., id.* ("Approximately 15 percent of the BTOP projects may require additional time to complete their work due to delays caused by weather, environmental and historic preservation approvals.").

19 Commission rulemaking RM-11358 was initiated by two petitions filed on January 18, 2007.

place the burden on incumbent LECs to justify copper retirements and require incumbent LECs to keep copper in place even after fiber is deployed.[20] Again, the Council does not argue herein that competitive providers should not obtain access to the copper facilities of incumbent LECs where the incumbent LEC is keeping them in service. However, it is clear that fiber technology is superior, that consumer demand is increasing rapidly for higher-performance networks, and, as a result, wireline providers of all types are necessarily retiring copper and deploying fiber plant.

Moreover, it is essential to understand that retiring copper is a key part of the business case for building fiber networks. Copper plant becomes increasingly expensive to maintain as it ages. In other words, letting it remain in place after fiber is installed is very expensive. Pumps, for instance, must continue to work to ensure water is removed from underground copper feeder cables. In addition, copper plant occupies large amounts of space in central offices and in conduits and on poles. Because of these and other factors, Verizon's operating expenses were reduced by approximately 70 percent when it installed its FiOS network and retired its copper plant.[21] This conclusion, of course, should come as no surprise to the Commission. The National Broadband Plan found that "requiring an incumbent to maintain two networks – one copper and one fiber – would be costly, possibly inefficient and reduce the incentive for incumbents to deploy fiber facilities."[22]

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20 *See* Mpower Request at 20-23.

21 *See e.g.*, Fast Net News, "Fiber Guy: Fiber Beats Cable & DSL, Reliability Surprise," available at: http://fastnetnews.com/fiber-news/175?start=56.

22 *See* NBP at 49. Should the Commission even consider seriously requiring that incumbent LECs maintain two networks (one fiber and one copper) in the face of harm to fiber deployment, it should in tandem and prior to reaching a final decision revisit the cost of (and price for) accessing copper facilities to ensure that the LECs are adequately compensated for maintaining them.

In sum, the Commission would turn back the clock if it were to adopt the proposals of the competitive providers and set back the objective to re-wire our country. Instead, the Commission should continue – and in fact accelerate – its efforts to build gigabit communities.

Respectfully submitted,

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